



COST PLUS INCENTIVE FEE (CPIF) PRICING ARRANGEMENT

[Contract #]
B-1B (D2)

Briefing For: []
10 Jan 01

Presented by [PC
O. phone]



OVERVIEW



- **Purpose**
- **Description of Services**
- **Goals of the Incentives**
- **Range of Incentive Effectiveness**
- **Incentive Fee Values**
- **Cost Incentive**
- **Quality Incentive**
- **Fee Overview**
- **Conclusion**



PURPOSE



As requested by [],
To explain CPIF pricing arrangement using
multiple incentives -- Cost and Quality



Description of Services



- Software update to Block D Program (D2)
- Estimated Target Price \$30.1M
- Effective date 16 Sep 00
- Period of performance thru Jul 02 (22 months)



Goals of the Incentive



- Control cost
- Exceed the quality standard of Block D software.
 - Compare D2 Flight Test Problem Reports (TPRs) to Block D
- Of the total fee negotiated 70% is allocated for cost incentive and 30% is allocated for quality incentive



Range of Incentive Effectiveness (Cost and Quality)



	Optimistic	Target	Pessimistic
Cost	24.8M	27.6M	30.3M
Fee	<u>3.5M</u>	<u>2.5M</u>	<u>1.3M</u>
Price	28.3M	30.1M	31.6M



Incentive Fee Values

Negotiated Values: $\text{Fee}_{C(70\%)}$ $\text{Fee}_{Q(30\%)}$

Target Fee 2.531M = 1.772M + .

759M

Min Fee 1.279M = .895M + .384M

Max Fee 3.509M = 2.456M + 1.053M



Cost Incentive

(Share Formula)

Formula used to develop the Contractor's share of Under(S_{cu}) and Over(S_{co}) Targets

$$S_{cu} = \frac{\text{Targ Fee} - \text{Optimistic Fee}}{\text{Targ Cost} - \text{Optimistic Cost}} \times (-100) = 36\%$$

Share ratio (Under Target) 64/36

$$S_{co} = \frac{\text{Targ Fee} - \text{Pessimistic Fee}}{\text{Targ Cost} - \text{Pessimistic Cost}} \times (-100) = 46\%$$

Share ratio (Over Target) 54/46

The share ratios do not apply to the total fee pool, only to the 70% set aside for cost incentive.

Therefore, the share ratio applies to 70% of the under or over run.



Quality Incentive (Development of Q_t)



Target Q (Q_t) is the sum of all applicable Test Problem Reports (TPRs) times the severity/weight factors found during Block D flight test.

$$0 \text{ (TPRs)} \times .1 = 0.00$$

$$13 \text{ (TPRs)} \times .07 = .91$$

$$17 \text{ (TPRs)} \times .05 = .85$$

$$47 \text{ (TPRs)} \times .03 = 1.41$$

$$0 \text{ (TPRs)} \times .01 = 0.00$$

$$\text{Block D (6 programs)} = 3.17$$

Review of TPRs resulted in 1.585 vs 3.17 for this effort.



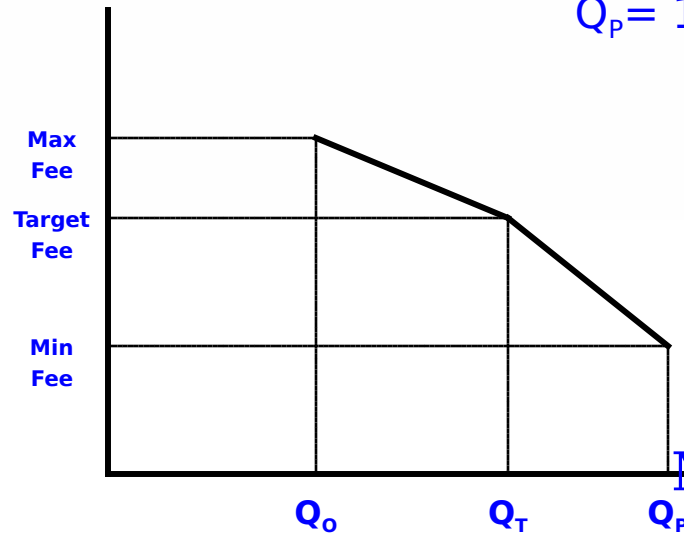
QUALITY INCENTIVE



A 20% increase or decrease from Q_t will result in
min or max fee $Q_t = 1.585 = .759M$

$$Q_o = 1.268 = 1.053M$$

$$Q_p = 1.902 = .384M$$



If $Q < Q_t$, Incentive Fee =
Targ Fee + $\{(Q_t - Q) / Q_t \times 20\% \} \times (\text{Max Fee} - \text{Targ Fee})$

If $Q > Q_t$, Incentive Fee =
Targ Fee - $\{(Q - Q_t) / Q_t \times 20\% \} \times (\text{Targ Fee} - \text{Min Fee})$

Summary: - \$1183/Quality Unit Change
+\$ 927/Quality Unit Change



Fee Overview

- Target Fee is 9.2% of Target Cost
 - Target Fee related to cost is 70% of 9.2% or 6.4%
 - Target Fee related to quality is 30% of 9.2% or 2.8%
- Max Fee is 12.7% of Target Cost
 - Max Fee related to cost is 70% of 12.7% or 8.9%
 - Max Fee related to quality is 30% of 12.7% or 3.8%
- Min Fee is 4.6% of Target Cost
 - Min Fee related to cost is 70% of 4.6% or 3.2%
 - Min Fee related to quality is 30% of 4.6% or 1.4%



Conclusion



CPIF with multiple incentives provides an opportunity to motivate the Contractor to improve quality as well as control cost.



What If: Optimistic Cost (Calculating Cost Incentive)



Allowable Cost Incurred (under run) - 24.625M

- Target Cost = 27.361M
- Actual Cost = 24.625M
- Under run = 2.736M
- Contractor's Share Under Target =
 $70\% \times 2.736\text{M} \times 35.75\% = .684\text{M}$
- Cost Incentive =
 $\text{Target Fee} + \text{Shared Fee} = 1.772\text{M} + .684\text{M} = 2.456\text{M}$



What If: Pessimistic Cost (Calculating Cost Incentive)



Allowable Cost Incurred (over run) - 30.097M

- Target Cost = 27.361M
- Actual Cost = 30.097M
- Over run = 2.736M
- Contractor's Share Over Target =
 $70\% \times 2.736M \times 45.75\% = .877M$
- Cost Incentive =
 $\text{Target Fee} - \text{Shared Fee} = 1.772M - .877M = .895M$



What If: Optimistic Quality (Calculating Quality Incentive)



Target Quality = 1.585

D2 Q value = 1.268

If $Q < Q_t$, then quality incentive fee =

Target Fee + $\{((Q_t - Q)/(Q_t \times 20\%)) \times (\text{Max fee} - \text{Target fee})\}$
=

.759M + $\{((1.585_{Q_t} - 1.268_Q)/(1.585_{Q_t} \times 20\%)) \times (1.05M - .759M)\}$ = 1.05M



What If: Pessimistic Quality (Calculating Quality Incentive)



Target Quality = 1.585

D2 Q value = 1.902

If $Q > Q_t$, then quality incentive fee =

Target Fee - $\{ ((Q - Q_t) / (Q_t \times 20\%)) \times (\text{Target fee} - \text{Min fee}) \}$
=

.759M - $\{ ((1.902_Q - 1.585_{Q_t}) / (1.585_{Q_t} \times 20\%)) \times (.759M - .383M) \}$ = .383M